

**411.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

**411.4 Measurement**

This work will not be measured separately for payment.

**411.4.01 Limits**

General Provisions 101 through 150.

**411.5 Payment**

No separate payment will be made for the work described in this section.

When Item 205 is included in the Proposal as a Pay Item, payment for this work is included in payment for unclassified excavation by the cubic yard (meter) as described in Subsection 205.4, "Measurement." Otherwise, payment is included in the overall price bid for other Contract Items.

Payment is full compensation for providing labor and equipment, sawing, removing and disposing, and providing other incidentals to accomplish the work described in this Specification.

Sawing Portland cement concrete overlaid with asphaltic concrete will be measured and paid for according to Section 444.

**411.5.01 Adjustments**

General Provisions 101 through 150.

**Section 412—Bituminous Prime****412.1 General Description**

This work includes preparing and treating an existing surface with bituminous material and blotter material, if required. Treat the surface according to these Specifications and conform to the lines shown on the Plans or established by the Engineer.

**412.1.01 Definitions**

General Provisions 101 through 150.

**412.1.02 Related References****A. Standard Specifications**

Section 424—Bituminous Surface Treatment

Section 821—Cutback Asphalt

**B. Referenced Documents**

General Provisions 101 through 150.

**412.1.03 Submittals**

General Provisions 101 through 150.

**412.2 Materials**

Unless otherwise specified, select the types of bituminous materials. The Engineer will determine the grade of materials to be used. The Specifications for the bituminous materials include:

<b>Material</b>	<b>Section</b>
Cutback Asphalt, RC-30, RC-70, RC-250 or MC-250, MC-30, or MC-70	821.2.01
Blotter Material (Sand)	412.3.05.G.3

**412.2.01 Delivery, Storage, and Handling**

General Provisions 101 through 150.

## 412.3 Construction Requirements

### 412.3.01 Personnel

General Provisions 101 through 150.

### 412.3.02 Equipment

Provide equipment that is in good repair, including at least the following units that meet the requirements of Subsection 424.3.02, "Equipment."

- Pressure distributor
- Power broom and blower
- Aggregate spreader (if required)

### 412.3.03 Preparation

See Subsection 412.3.05.B, "Condition of Surface."

### 412.3.04 Fabrication

General Provisions 101 through 150.

### 412.3.05 Construction

Prime the following bases and other areas:

- Cement or lime stabilized bases or subbases, regardless of pavement thickness
- Soil or aggregate bases or sub-bases on which bituminous surface treatment will be placed
- Soil or aggregate bases or sub-bases on which less than 5 in (125 mm) total thickness of hot mix asphaltic concrete will be placed

Prime is not required on driveway construction and paved shoulders.

#### A. Weather Limitations

Do not apply bituminous prime under any of these conditions:

- Surface is wet.
- Air temperature is below 40 °F (4 °C) in the shade.
- Rain is imminent.
- Weather conditions may prevent proper prime coat construction.

#### B. Condition of Surface

Ensure that the surface to which the prime is to be applied has been finished to the line, grade, and cross section specified.

Ensure that the surface is uniformly compacted and bonded. Correct surface irregularities according to the Specifications for the construction being primed.

#### C. Cleaning

Remove from the road loose material, dust, caked clay, and other material that may prevent bonding of the prime with the surface. Use power sweepers or blowers the full width of the prime and 2 ft (600 mm) more on each side. Where necessary, sweep by hand.

#### D. Moisture

Ensure that the surface is only slightly damp. If the surface is too wet, allow it to dry. If it is too dry, the Engineer may require that it be sprinkled lightly just before priming.

#### E. Temperature and Surface Texture

The surface texture and condition of the surface determine the bituminous material grades to be used.

The following table shows the bituminous material grades and application temperatures as they are applied to various surface textures.

Base Texture	Tight	Average	Open
Materials and grade	MC-30 RC-30	RC-70 or MC-70	RC-250 or MC-250
Application temperature °F (°C)	80–120 (27–49)	105–180 (41–82)	145–220 (63–104)

The Engineer will determine the temperature for applying bituminous prime within the limits shown above.

Heat and apply bituminous materials as specified in Subsection 424.3.05.D, “Heating Bituminous Material” and Subsection 424.3.05.E, “Applying Bituminous Material.”

#### **F. Amount and Extent of Prime**

The Engineer will determine the exact amount of bituminous material to be used within minimum and maximum rates of 0.15 to 0.30 gal/yd<sup>2</sup> (0.7 to 1.4 liters/m<sup>2</sup>). Apply the specified amount as follows:

1. Apply the determined amount uniformly and accurately. Ensure that the amount applied to any 0.5-mile (800 m) section is within 5 percent of the amount specified.
2. Apply the prime the full width of the proposed wearing surface that will be superimposed plus 6 in (150 mm) more on each side.

#### **G. Protection, Curing, and Maintenance**

Do the following after priming the surface:

1. Close to Traffic  
Do not allow traffic on the primed surface. Leave the surface undisturbed until the prime thoroughly cures and does not pick up under traffic.
2. Roll  
If the surface becomes soft after it is primed, roll the surface longitudinally with a pneumatic-tired roller at no more than 6 mph (10 kph) until the surface is firmly set.
3. Blot  
If necessary to prevent the prime from being picked up, spread clean, dry, sharp sand over the surface by hand or mechanically. Apply sand only to places that are tacky and use the least amount needed to prevent pick up. No extra payment for this work or material will be made.
4. Open to Traffic  
After rolling and sanding (if required), open the primed surface to ordinary traffic subject to the conditions in Subsection 412.3.05.G.1, “Close to Traffic.”
5. Maintenance  
Maintain the prime coat and the primed course surface until it is covered by other construction. Remove excess bituminous material.

#### **412.3.06 Quality Acceptance**

General Provisions 101 through 150.

#### **412.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

### **412.4 Measurement**

Bituminous material for prime is not measured for separate payment.

#### **412.4.01 Limits**

General Provisions 101 through 150.

## 412.5 Payment

Bituminous material for prime is not paid for separately. The cost to clean the surface, furnish, haul and apply materials including water and sand, roll, and perform repairs and maintenance is included in the Unit Price bid for each individual Base Item.

### 412.5.01 Adjustments

General Provisions 101 through 150.

## **Section 413—Bituminous Tack Coat**

### 413.1 General Description

This work includes furnishing and applying a bituminous tack coat on a prepared road surface including cleaning the road surface.

#### 413.1.01 Definitions

General Provisions 101 through 150.

#### 413.1.02 Related References

##### A. Standard Specifications

Section 109—Measurement and Payment

Section 400—Hot Mix Asphaltic Concrete Construction

Section 424—Bituminous Surface Treatment

Section 427—Emulsified Asphalt Slurry Seal

Section 820—Asphalt Cement

Section 824—Cationic Asphalt Emulsion

##### B. Referenced Documents

General Provisions 101 through 150.

#### 413.1.03 Submittals

General Provisions 101 through 150.

### 413.2 Materials

Ensure that materials meet the following Specifications:

Material	Section
Asphalt cement, performance grade PG 58-22, PG 64-22, or PG 67-22	820.2.01
Cationic emulsified asphalt CRS-2h or CRS-3	824.2.01

Asphalt cement of performance grade PG 58-22, PG 64-22 or PG 67-22 is used for bituminous tack coat in work performed in Section 400. Use cationic emulsified asphalt as a special application material only if directed by the Engineer.

The Department may change the grade or type of bituminous materials without a change in the Contract Unit Price if the Engineer determines that the grade or type selected is not performing satisfactorily.

#### 413.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

### 413.3 Construction Requirements

#### 413.3.01 Personnel

General Provisions 101 through 150.